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October 19, 2004

Anand U. Desai, PhD
Commissioner for Patents
ART Unit 1653
P. O. Box 1450
Alexandria, VA 22313-1450

Dear Dr. Desai:

Thank you for your Office Action Summary reply to my patent application number 10/707,262 entitled Engineering of Controlled Deamidation Rates in Peptides, Proteins, and Similar Structures. Within the 3-month period of reply, I will submit a revised application, which will be much improved as a result of your suggestions and comments.

In particular, I will make much more clear that my discoveries make possible, for the first time, the engineering of deamidation in peptide and protein structures by means of primary sequence and three-dimension structure manipulation.

The discoveries that primary structure and three-dimensional structure determine deamidation rates in peptides and proteins under physiological conditions were made more than 30 years ago. These discoveries predate the paper by Wright, which you enclosed, by approximately 20 years. I, of course, am not attempting to patent these discoveries.

For 30 years, however, it has been an unrealized dream of scientists that study deamidation to be able to quantitatively predict the effects of primary structure and three-dimensional structure on deamidation and thereby engineer deamidation rates for many purposes. This dream has been unrealized because the necessary quantitative data was not available and suitable computational techniques had not been discovered.

Through extensive experimentation and computational work that I have performed, it is now possible to make these predictions and to conduct this engineering. These data and methods are the subject of my patent application.

My revised application will incorporate, by reference and computer disk, a complete review of all research related to deamidation that has been reported during the past two centuries. This will be in the form of the book, *Molecular Clocks: Deamidation of Asparaginyl Residues in Peptides and Proteins* by Robinson and Robinson. This book also puts in perspective the claims in my patent application.

Enclosed, for your interest, is a copy of this book. Thank you for your many helpful comments, insights, and suggestions.

Best Regards,

Noah Robinson